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| EXAMINER |
|---|
| FRINK, JOHN MOORE |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.    2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All  b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>9/24/2003, 5/19/2006</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.      Claims 1 – 6 and 18 - 20 rejected under 35 U.S.C. 102(e) as being anticipated by

Ball et al. (US 2003/0046390 A1), hereafter Ball.

3.      Regarding claim 1, Ball further shows a method comprising:

receiving at a discovery engine identification of a domain of interest and

identification of a seed router within the domain of interest ([0075,0083], Figs. 3, 3A);

the discovery engine querying the seed router for information including

identification of its peer routers ([0083]);

receiving at the discovery engine the information from the seed router; from the

information received from the seed router, the discovery engine determining at least one

peer router of the seed router ([0083]);

the discovery engine querying the at least one peer router for information

including identification of its peer routers ([0084-0085]); and

the discovery engine compiling topology information for the routers within the

domain of interest (Figs. 4, 4A, 4B, [0079-0085]).

4.      Regarding claim 2, Ball further shows where the routers comprise said

information including identification of their respective peer routers (Fig. 4A, item 184).

5.      Regarding claim 3, Ball further shows where the routers are routers that

communicate via a common protocol ([0068,0074,0076]).

6.      Regarding claim 4, Ball further shows where the common protocol comprises

Border Gateway Protocol (BGP) ([0068,0074]).

7.      Regarding claim 5, Ball further shows where the routers comprise intradomain

and interdomain routers (Figs. 2, 4, 4A, 4B).

8.      Regarding claim 6, Ball further shows receiving at said discovery engine access

information for the seed router ([0075]).

9.      Regarding claim 18, Ball further shows a method for discovering Border Gateway

Protocol (BGP) routers within a domain of interest, the method comprising: receiving at

a discovery engine identification of the domain of interest and identification of a seed

BGP router within the domain of interest; the discovery engine querying the seed BGP

router for its peer table; receiving at the discovery engine the peer table from the seed

BGP router; from the seed BGP router's peer table, the discovery engine determining

each peer BGP router of the seed BGP router; the discovery engine querying each peer

BGP router of the seed BGP router for its respective peer table; receiving at the

discovery engine the peer table from each queried peer BGP router; from each queried

peer BGP router's peer table, the discovery engine determining each peer BGP router

of the queried peer BGP router; and the discovery engine compiling, from the received

information from each queried BGP router, topology information including identification

of the BGP routers within the domain of interest and their relationships (Figs. 2, 3, 3A, 4, 4A, 4B, [0075-0085]).

10.     Regarding claim 19, Ball further shows receiving at said discovery engine access information for the seed BGP router.

11.     Regarding claim 20, Ball further shows where said domain of interest includes at least one autonomous system ([0068-0069, 0081-0085]).


## *Claim Rejections - 35 USC § 103*

12.     The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13.     Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ball in view of RFC 1157 (http://www.faqs.org/rfcs/rfc1157.html).

Ball shows the method of claim 1, including using SMNP ([0075]).

Ball does not show utilizing an SMNP community string.

RFC 1157 shows an SMNP community string (also known as a community name, Section 3.2.5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Ball with that of RFC 1157 in order to fully support the SMNP protocol, which specifies support for community names/strings, which essentially function as passwords.

14.     Claims 8 – 10, 12 – 15, and 17 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ball.

15.     Regarding claim 8, Ball shows a Border Gateway Protocol (BGP) router

discovery engine comprising:

computer-executable software code stored to a computer-readable medium, the

computer-executable software code comprising code for querying a seed BGP router

within a domain of interest for information from its peer list, code for receiving the peer

table information from the seed BGP router, code for determining from the peer list

information received from the seed BGP router each peer router of the seed router,

code for querying each peer router of the seed router for information from its respective

peer list (Figs. 2,3,3A,4,4A,4B,[0075-0085]); and a processor for executing the

computer-executable software code ([0064]).

Ball does not show utilizing tables.

The examiner takes official notice that it was notoriously old and well known at

the time of the invention to utilize tables as a data structure.

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the disclosure of Ball to utilize tables instead of lists to utilize a

potentially more familiar data structure, to conform with a particular programming

languages syntax, or to utilize a potentially more flexible data structure (as tables are

capable of having multiple rows and columns, while lists are using thought of as being

one rather than two dimensional).

16.    Regarding claim 9, Ball further shows code for receiving identification of said router, identification of said domain of interest, and access information for said seed BGP router

17.    Regarding claim 10, Ball further shows code for using the peer table information received from the queried routers for compiling topology information for the BGP routers within the domain of interest

18.    Regarding claim 12, Ball further shows where said topology information includes information BGP-speaking devices ([0075-0085]).

Ball does not show where information for only BGP devices is utilized.

The examiner takes official notice that it was notoriously old and well known to those of ordinary skill in the art at the time of the invention to only support one protocol, as any development process starts out in its initial stage as only supporting a single protocol. Support for additional protocols are then optionally added at additional cost and adding additional complexity to the system.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Ball to only support BGP devices, as the current disclosure enabling the use of BGP devices does not require supporting non-BGP devices, and thus not supporting BGP devices would simply the disclosure, requiring less work to implement and a simpler final product than the only other available alternative.

19.    Regarding claim 13, Ball further shows code for identifying from the peer table information received from a queried BGP router any newly discovered peer router not

yet queried for its peer table information; and code for querying said newly discovered

peer router for information from its peer table ([0079-0080,0084-0085]).

20.    Regarding claim 14, Ball further shows means for recursively querying identified

BGP routers within a domain of interest for their respective peer tables and identifying

from their respective peer tables their respective peer BGP routers within the domain of

interest; and means for compiling from the information received from the queried BGP

routers a topology of the BGP routers within the domain of interest (Figs. 4, 4A, 4B,

[0079-0085]).

21.    Regarding claim 15, Ball further shows where said means for recursively

querying identified BGP routers receives identification of a seed router within the

domain of interest and begins said recursively querying by querying the seed router for

information from its peer table ([0074-0075,0079-0085]).

22.    Regarding claim 17, Ball further shows where said means for recursively

querying comprises: means for identifying from the peer table received from a queried

BGP router any newly discovered peer router not yet queried for its peer table; and

means for querying said newly discovered peer router for its peer table ([0079-

0080,0084-0085])

23.    Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Ball as applied to claims 8 and 10 above, and further in view of Pelavin et al., (US

6,393,486 B1), hereafter Pelavin.

        Ball shows claims 10 and 14, including identification of all peer routers of each

BGP router within said domain of interest ([0075-0085]).

Ball does not show identification of interfaces of each BGP router within said domain of interest, and indication of state of each BGP router within said domain of interest

Pelavin shows identification routers interfaces and states (col. 17 lines 17 – 50, col. 41 line 56 – col. 42 line 10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Ball with that of Pelavin in order to provide a network centric analysis of potential problems a provide diverse views of network topology, enhancing a network manager's ability to manage a network (Pelavin, col. 2 lines 38 – 44).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Frink whose telephone number is (571) 272-9686. The examiner can normally be reached on M-F 7:30AM - 5:00PM EST; off alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571)272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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